Recreational
Use Attainability Analysis
Protocol

Missouri Department of Natural Resources
Water Protection Program

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Purpose

This protocol is intended as guidance for any party interested in conducting investigations to provide scientifically defensible information on the existing and attainable recreational uses of the classified waters of the State. Classified waters are an important subset of the waters of the State as they are afforded specific protections under regulatory provisions and are subject to numeric criteria to protect the designated use. The information obtained using guidance presented in this document will be used to:

- Comply with federal requirements for the designation of recreational uses,
- Assist in identifying waters of the State which support recreational uses,
- Assist in identifying waters of the State which do not support water-contact recreational uses,
- Respond to the changes in capacity of surface waters to support recreational uses, and/or
- Review and modify, as appropriate, the recreational designation of surface waters.

Any interested person may conduct a Use Attainability Analysis (UAA) and submit the resulting report to the Department of Natural Resources (the department). An internal UAA review committee will meet periodically, as needed, to review completed UAAs for accuracy, completeness, and adequacy.

The department encourages anyone wishing to perform a UAA to meet with department staff prior to initiating the work. These pre-meetings may help ensure a confident understanding of this protocol.

Background

Federal Clean Water Act and Code of Federal Regulations

Use designations for waters under the Clean Water Act come from the Act's declaration of goals, commonly referred to as the "fishable/swimmable" goal.

Clean Water Act section 101(a)(2):

It is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish and wildlife and provides for recreation in and on the water be achieved by July 1, 1983.

The Clean Water Act contains details regarding the State's role in designating uses for water bodies, including suggestions for categories of use classifications.

Clean Water Act section 303(c)(2)(A):

Whenever the State revises or adopts a new standard, such revised or new standards shall be submitted to the Administrator. Such revised or new water quality standard shall consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses. Such standards shall be such as to protect the public health or welfare, enhance the quality of water and serve the purposes of this Act. Such standards shall be established taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and value for navigation.

The definition of waters of the United States can be found below.

40 CFR 122.2:

Waters of the United States or waters of the U.S. means:

(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(b) All interstate waters, including interstate "wetlands;"

(c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands," sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

(1) Which are or could be used by interstate or foreign travelers for recreational or other purposes;

(2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(3) Which are used or could be used for industrial purposes by industries in interstate commerce;

(d) All impoundments of waters otherwise defined as waters of the United States under this definition;

(e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;

(f) The territorial sea; and

(g) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. [See Note 1 of this section.] Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

Federal definition of a Use Attainability Analysis can be found below.

40 CFR 131.3(g).:

Use attainability analysis is a structured scientific assessment of the factors affecting the attainment of the use which may include physical, chemical, biological and economic factors as described in § 131.10(g).

Federal regulations contain details regarding the State's role in designating uses for water bodies, including suggestions for categories of use classifications, which were derived from section 303(c)(2)(A) of the Clean Water Act.

40 CFR 131.10(a):

Each State must specify appropriate water uses to be achieved and protected. The classification of the waters of the State must take into consideration the use and value of the water for public water supplies, protection and propagation of fish, shellfish and wildlife, recreation in and on the water, agricultural, industrial, and other purposes including navigation. In no case shall a State adopt waste transport or waste assimilation as a designated use for any waters of the United States.

Provisions within the federal regulations preclude the removal of existing or attainable uses. Existing uses are those attained in the water body on or after November 28, 1975, regardless of listing in the State Clean Water Law.

40 CFR 131.10(g):

States may remove a designated use which is not an existing use, as defined in § 131.3, or establish sub-categories of a use if the State can demonstrate that attaining the designated use is not feasible because:

1. *Naturally occurring pollutant concentrations prevent the attainment of the use, or*
2. *Natural, ephemeral, intermittent, or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met, or*
3. *Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place, or*
4. *Dams, diversions, or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or*

to operate such modifications in a way that would result in the attainment of the use, or.

5. *Physical conditions related to the natural features of the water body, such as lack of proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses,*[1] *or*
6. *Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact.*

Federal regulation establishes when designated uses may not be removed.

40 CFR 131.10(h):

States may not remove designated uses if:

(1) They are existing uses, as defined in § 131.3, unless a use requiring more stringent criteria is added; or

(2) Such uses will be attained by implementing effluent limits required under sections 301(b) and 306 of the Act and by implementing cost-effective and reasonable best management practices for nonpoint source control.

Provisions within federal regulations also require that States upgrade the designated uses of the water body to what is actually being attained.

40 CFR 131.10(i):

Where existing water quality standards specify designated uses less than those which are presently being attained, the State shall revise its standards to reflect the uses actually being attained.

Federal regulations require the State to conduct a Use Attainability Analysis in order to justify deviation from the use designations set forth in the Clean Water Act's "fishable/swimmable" goal.

40 CFR 131.10(j).

A State must conduct a use attainability analysis as described in 131.3(g) whenever:

(1) The State designates or has designated uses that do not include the uses specified in section 101(a)(2) of the Act, or

(2) The State wishes to remove a designated use that is specified in section 101(a)(2) of the Act or to adopt subcategories of uses specified in 101(a)(2) of the Act which require less stringent criteria.

[1] Physical features, as described in 40 CFR 131.10(g)5., must be associated with one or more of the other removal criteria [40 CFR 131.10(g)1.-4. & 6.] in order to remove a recreational use.

Missouri Clean Water Law and Code of State Regulations

The Missouri Clean Water Law (Section 644, RSMo) and the water quality standards (10 CSR 20-7.031) establish water quality goals for all waters of the State. Waters of the State are defined in the Missouri Clean Water Law and 10 CSR 20-2.010 as:

> *All rivers, streams, lakes, and other bodies of surface and subsurface water lying within or forming a part of the boundaries of the State which are not entirely confined and located completely upon lands owned, leased, or otherwise controlled by a single person or by two or more persons jointly or as tenants in common. These waters also include waters of the United States lying within the State.*

10 CSR 20-7.031(1)(F) Classified waters

During base flow periods, some rivers back water into tributaries, which are not otherwise classified. These permanent backwater areas are considered to have the same classification as the water body into which the tributary flows.

1. *Class L1—Lakes used primarily for public drinking water supply.*
2. *Class L2—Major reservoirs.*
3. *Class L3—Other lakes, which are waters of the State. These include both public and private lakes. For effluent regulation purposes, publicly owned L3 lakes are those for which a substantial portion of the surrounding lands are publicly owned or managed.*
4. *Class P—Streams that maintain permanent flow even in drought periods.*
5. *Class P1—Standing-water reaches of Class P streams.*
6. *Class C—Streams that may cease flow in dry periods but maintain permanent pools which support aquatic life.*
7. *Class W—Wetlands that are waters of the State that meet the criteria in the Corps of Engineers Wetlands Delineation Manual (January 1987), and subsequent federal revisions. Class W waters do not include wetlands that are artificially created on dry land and maintained for the treatment of mine drainage, stormwater control, drainage associated with road construction, or industrial, municipal or agricultural waste. Class W determination on any specific site shall be consistent with federal law.*

10 CSR 20-7.031(1)(C) Beneficial water uses.

Beneficial uses (1)(C)1.-11. of the classified waters are identified in Tables G and H. Beneficial uses (1)(C)12.-15. of classified waters must be determined on a site-by-site basis and are therefore not listed in Tables G and H.

1. *Irrigation—Application of water to cropland or directly to plants that may be used for human or livestock consumption. Occasional supplemental irrigation, rather than continuous irrigation, is assumed.*
2. *Livestock and wildlife watering—Maintenance of conditions to support health in livestock and wildlife.*
3. *Cold-water fishery—Waters in which naturally occurring water quality and habitat conditions allow the maintenance of a naturally reproducing or stocked trout fishery and other naturally reproducing populations of recreationally important fish species.*
4. *Cool-water fishery—Waters in which naturally occurring water quality and habitat conditions allow the maintenance of a sensitive, high-quality sport fishery (including*

smallmouth bass and rock bass) and other naturally reproducing populations of recreationally important fish species.

5. *Protection of aquatic life (General warm-water fishery)—Waters in which naturally occurring water quality and habitat conditions allow the maintenance of a wide variety of warm-water biota, including naturally reproducing populations of recreationally important fish species. This includes all Ozark Class C and P streams, all streams with seven (7)-day Q10 low flows of more than one-tenth cubic feet per second (0.1 cfs), all P1 streams and all classified lakes. However, individual Ozark Class C streams may be determined to be limited warm-water fisheries on the basis of limited habitat, losing-stream classification, land-use characteristics or faunal studies which demonstrate a lack of recreationally important fish species.*
6. *Protection of aquatic life (Limited warm-water fishery)—Waters in which natural water quality and/or habitat conditions prevent the maintenance of naturally reproducing populations of recreationally important fish species. This includes non-Ozark Class C streams and non-Ozark Class P streams with seven (7)-day Q10 low flows equal to or less than 0.1 cfs and Ozark Class C streams with the characteristics outlined in paragraph (1)(C)5.*
7. *Human health protection (Fish consumption and secondary contact recreation)[3]—Criteria to protect this use are based on the assumption of an average amount of fish consumed on a long-term basis. Protection of this use includes compliance with Federal* [Food and] *Drug Administration (FDA) limits for fish tissue, maximum water concentrations corresponding to the 10^{-6} cancer risk level and other human health fish consumption criteria. Secondary contact recreation assumes limited physical contact with the water without likelihood of water ingestion.*
8. *Whole-body-contact recreation—Activities in which there is direct human contact with the raw surface water to the point of complete body submergence. The raw water may be ingested accidentally and certain sensitive body organs, such as the eyes, ears and the nose, will be exposed to the water. Although the water may be ingested accidentally, it is not intended to be used as a potable supply unless acceptable treatment is applied. Water so designated is intended to be used for swimming, water skiing or skin diving.*
9. *Boating and canoeing—Uses include fishing, wading, commercial and recreational boating, any limited contact incidental to shoreline activities, and activities in which users do not swim or float in the water. These recreational activities may result in contact with the water that is either incidental or accidental and the probability of ingesting appreciable quantities of water is minimal.[2]*
10. *Drinking water supply—Maintenance of a raw water supply, which will yield potable water after treatment by public water treatment facilities.*
11. *Industrial process water and industrial cooling water--Water to support various industrial uses; since quality needs will vary by industry, no specific criteria are set in these standards.*
12. *Storm- and flood-water storage and attenuation[3]—Waters which serve as overflow and storage areas during flood or storm events slowly release water to downstream areas, thus lowering flood peaks and associated damage to life and property.*

[2] Draft definition.
[3] These use definitions may be modified in future WQS revisions.

13. *Habitat for resident and migratory wildlife species, including rare and endangered species—Waters that provide essential breeding, nesting, feeding and predator escape habitats for wildlife including waterfowl, birds, mammals, fish, amphibians and reptiles.*
14. *Recreational, cultural, educational, scientific and natural aesthetic values and uses—Waters that serve as recreational sites for fishing, hunting and observing wildlife; waters of historic or archeological significance; waters which provide great diversity for nature observation, educational opportunities and scientific study.*
15. *Hydrologic cycle maintenance—Waters hydrologically connected to rivers and streams serve to maintain flow conditions during periods of drought. Waters that are connected hydrologically to the groundwater system recharge groundwater supplies and assume an important local or regional role in maintaining groundwater levels.*

Removal of a Use

Existing Uses versus Designated Uses

Water uses are categorized as either "existing" or "designated", or as both.

"Existing uses" are defined in 40 CFR 131.3(e) "*...as those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards."*

"Designated uses" are defined in 40 CFR 131.3(f) as *"...those uses specified in water quality standards for each water body segment whether or not they are attained."*

Water body segments that have a designated use may have that use removed, if it can be shown that the use cannot be attained due to one or more of the factors described in Title 40 of the Code of Federal Regulations Section 131.10(g)1.-6. The submitter must provide evidence in the form of a UAA demonstrating that the use is neither existing nor attainable. Evidence of an existing use that occurred after November 28, 1975, but is no longer observed at the time of the UAA, must remain designated for that use unless substituted for another use that has water quality criteria as stringent or more stringent than the orginal use.

Waters in Populated Areas

Recreational uses of waters are more likely to occur in areas where higher population densities exist, especially in residental areas. A UAA on a recreational use of a water body in areas of higher population density is the same process as a UAA on a rural water body. However, the search for evidence on use attainability in waters in populated areas must be thorough and may need to involve an expanded effort including, but not limited to, multiple field observations, several interviews with area residents, and an extensive collection of water quality data.

Evaluation Protocol for Recreational Use Attainability Analyses

The following italicized paragraphs set forth the criteria established by the U.S. Environmental Protection Agency for removal of a designated use. The paragraphs that follow the italicized portions provide additional guidance for implementing the federal criteria for Missouri's waters.

Natural Pollutant Sources

40 CFR 131.10(g): *States may remove a designated use which is not an existing use, as defined in section 131.3 or establish subcategories of a use if the State can demonstrate that attaining the designated use is not feasible because:*

1. *Naturally occurring pollutant concentrations prevent the attainment of the use.*

The only pollutant of concern for recreational use is bacteria. Where natural sources of bacteria, such as wildlife, are the cause of noncompliance with the water quality standards and cannot be controlled, then it could be concluded through the UAA process that water-contact recreation is not attainable. Documentation could include, but is not limited to, watershed characterization, bacterial source tracking, antibiotic resistance analysis, historical accounts, and/or interviews. When watersheds contain both natural and anthropogenic sources of bacteria, the UAA must separately quantify the bacterial contributions from natural sources and show through science that the natural contribution alone is the cause for the water quality to exceed the bacterial standard.

Natural, Ephemeral, Intermittent or Low-Flow Conditions

40 CFR 131.10(g): *States may remove a designated use which is not an existing use, as defined in section 131.3, or establish subcategories of a use if the State can demonstrate that attaining the designated use is not feasible because:*

2. *Natural, ephemeral, intermittent, or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met.*

The UAA submitter may show that naturally caused ephemeral[4], intermittent[5] or low-flow conditions prevent the attainment of recreational uses. Stream studies should be conducted during the recreational season (April 1st to October 31st) unless sufficient evidence can be provided outside this season. In order to support whole body contact recreation, a maximum depth of at least one (1.0) meter (3.28 feet) in the deepest pool or an average depth of at least one-half (0.5) meter (1.64 feet) must be maintained during base flow conditions (see paragraph

[4] *Ephemeral stream* is a stream that flows only in direct response to precipitation in the immediate watershed or in response to the melting of a cover of snow and ice, and which has a channel bottom that is always above the local water table [30 CFR 701.5].

[5] *Intermittent stream* is defined as a stream that flows only part of the time. Flow generally occurs for several weeks or months in response to seasonal precipitation, due to groundwater discharge, in contrast to an ephemeral stream, which flows but a few hours or days following a single storm. [USEPA Terminology Reference System, http://oaspub.epa.gov/trs/trs_proc_qry.navigate_term?p_term_id=13328&p_term_cd=TERMDIS].
Intermittent stream means—A stream or reach of a stream that is below the local water table for at least some part of the year, and obtains its flow from both surface runoff and ground water discharge [30 CFR 701.5].

on Base Flow Conditions on Page 15). The average depth criterion is met if more than 50 percent (%) of all of the water surveyed from an observation point is at least 0.5 meter in depth.

Boating and Canoeing use will be considered attainable when the water has a depth of at least one-half (0.5) meter (1.64 feet) during base flow conditions or when clear evidence of this use is shown.

Non-Remedial, Human Caused Conditions
40 CFR 131.10(g): *States may remove a designated use which is not an existing use, as defined in section 131.3, or establish subcategories of a use if the State can demonstrate that attaining the designated use is not feasible because:*

3. *Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place.*

A designation of recreational use can be removed if documentation through an environmental assessment of multiple alternatives demonstrates that

a. Human caused conditions cannot be remedied;
b. Human caused conditions will cause environmental damage greater than what currently exists;
c. Human caused sources of pollution cannot be remedied; or
d. Human caused sources of pollution will cause environmental damage greater than what currently exists.

Hydrologic Modifications
40 CFR 131.10(g): *States may remove a designated use which is not an existing use, as defined in section 131.3, or establish subcategories of a use if the State can demonstrate that attaining the designated use is not feasible because:*

4. *Dams, diversions, or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modifications in a way that would result in the attainment of the use.*

The removal of designated use may be considered when permanent or long-term hydrologic modifications to the water body segment prohibit the attainment of the use. The UAA submitter must show that the hydrologic modifications are constructed and operated in such a way that recreation does not or reasonably cannot occur within the water body segment.

Natural Physical Features
40 CFR 131.10(g): *States may remove a designated use which is not an existing use, as defined in section 131.3, or establish subcategories of a use if the State can demonstrate that attaining the designated use is not feasible because:*

5. *Physical conditions related to the natural features of the water body, such as lack of proper substrate, cover, flow, depth, pools, riffles, and the like unrelated to water quality, preclude attainment of aquatic life protection uses.*

Substantial Widespread Social & Economic Impact

40 CFR 131.10(g): *States may remove a designated use which is not an existing use, as defined in section 131.3 or establish subcategories of a use if the State can demonstrate that attaining the designated use is not feasible because:*

6. *Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact.*

This criterion may be applicable when the construction of pollution control measures required to attain the bacteria standards for water-contact recreation would result in widespread and substantial adverse social or economic impacts. Potential sources for evaluating substantial widespread social and economic impacts, which provide criteria for decision making, include:

- USEPA's *Interim Economic Guidance for Water Quality Standards Workbook* (EPA 823-B-95-002, http://www.epa.gov/waterscience/standards/econworkbook/) or
- USEPA's *Combined Sewer Overflows—Guidance for Financial Capability Assessment and Schedule Development* (EPA 832-B-97-004, http://www.epa.gov/npdes/pubs/csofc.pdf).

Preparation for Recreational UAA Field Surveys

The reviewer should examine all applicable materials and be familiar with the water body to be surveyed. The following checklist may aid the reviewer.

The following materials are available from the Missouri Department of Natural Resources (MDNR):

_____ Survey forms,
_____ UAA Protocol
_____ 10 CSR 20-7.031 Missouri Water Quality Standards (http://www.sos.mo.gov/adrules/csr/current/10csr/10c20-7.pdf)
_____ NPDES permitted facilities located on the water body of interest
_____ Water body identification number (WBID#)
_____ Eight-digit Hydrologic Unit Code (HUC)
_____ Stream survey data (if available)
_____ Maps of the watershed
_____ Water quality data
_____ Location datasheet for GPS data collection.

The following materials may be available from the United States Geological Survey (USGS):

_____ Daily stream flow records (http://mo.water.usgs.gov/)
_____ Water quality monitoring records
_____ 1:24,000 (7.5 minute) topographic quadrangle map

The following sources may also have stream survey records:

_____ Local universities
_____ MDNR regional offices
_____ MDNR Geological Survey & Resource Assessment Division
_____ Missouri Department of Conservation (http://www.mdc.mo.gov/)
_____ United States Fish & Wildlife Service (http://www.fws.gov/)
_____ U.S. Army Corps of Engineers (http://www.usace.army.mil/)
_____ Missouri Stream Teams (http://www.mostreamteam.org/)
_____ Local municipalities
_____ Library literature searches

Field Assessment Procedures for Recreational UAAs

Recreational Season – UAAs aimed at assessing recreational use should be performed during the recreational season defined by rule as between April 1 and October 31. However, UAAs may be performed at any time of the year if sufficient evidence exists to confidently determine the existing and/or the attainment of a use.

Base Flow Conditions – UAAs are only "snapshots" of observations when conducted in accordance with this protocol. To acquire the best results from a single field survey, UAAs should be conducted during base flow periods. Base flow is that portion of a stream's flow contributed by sources of water other than precipitation runoff. This refers to a fair weather flow sustained primarily by springs or groundwater seepage, wastewater discharges, irrigation return flows, releases from reservoirs, or some combination of these factors (page 2; http://www.kdhe.state.ks.us/water/SWQS_12_03.pdf).

Points of Observation – At a minimum, field activities require a visual inspection of the targeted water body at a minimum of three (3) road crossings and other publicly accessible locations. If information is given regarding locations of other possible recreation sites within less accessible stretches within the UAA segment[6], then those sites shall also be included in the survey if possible. For stream segments receiving a domestic discharge, a minimum of three (3) stream sites near the discharge point should be selected for assessment.
For lake assessments, one site may be sufficient to characterize existing or potential uses if the entire lake can be adequately observed from one location.

When evaluating water bodies on private land, surveyors must secure the landowner's permission to access the sites.

[6] UAA segment is the stream segment targeted for a UAA and is not required to be the full length described as a separate segment in Table H. If less than the full length represented by a WBID, the start and end points of the shorter segment must be clearly identified on the survey forms. Partial assessments of lakes are not allowed.

Mapping - All sites shall be clearly marked on 1:24,000 (7.5 minute) USGS topographic quadrangle maps. When possible, it is suggested that Global Positioning System (GPS) coordinates of each site be taken on-site in the Universal Transverse Mercator (UTM), North American Datum 1983 (NAD 83), Zone 15 format (easting and northing) and recorded in the field notes. If GPS is used, the department also recommends that the coordinates be recorded on the department's Locational Data Sheet to ensure accurate documentation of details. The Locational Data Sheet can be obtained from the department upon request.

When a portion of a WBID segment (as listed in Table H of the Water Quality Standards) is targeted for a UAA, the surveyor must clearly identify the start and end points (upstream and downstream coordinates) of the portion on Data Sheet A. Partial assessment of lakes is not allowed.

Use of Forms - Narrative site assessments are to be clearly recorded on the forms provided in this protocol. To eliminate the risk of confusion between multiple sites, each site must be recorded on a separate form. The bacteria data sheet (Data Sheet C) should be used to provide additional evidence for use removal, under the criteria in 40 CFR 131.10(g)1., 3., or 6., if bacteria solely or in combination with other factors cause unattainment of recreational uses.

Photographic Record - A photographic record must be made of each site during the site assessment. Photographs should include at least an upstream view, downstream view and any evidence of observed or potential uses. Photographs must be catalogued in the field notes in a manner that indicates the site location, date, view orientation and what is being shown.

Interviews - Users present during the survey, waterside landowners and local residents, including school-aged children, should be interviewed regarding the history of the water body in question. Interviews are to be clearly recorded in the field notes. Persons interviewed should be identified by legal name and address in the field notes and written report.

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet A - Water Body Identification

Water Body Name: (from USGS 7.5' quad)
8-digit HUC:
Missouri WBID #:
County:
Upstream Legal Description:
Downstream Legal Description:
Upstream Coordinates: (UGS 84, ddd.ddddd)
Downstream Coordinates: (UGS 84, ddd.ddddd)
Discharger Facility Name(s):
Discharger Permit Number(s):
Number of Sites Evaluated:
Name of Surveyor and Telephone Number:
Organization:
Position:

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed:_____ Date: _____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(A separate data sheet must be completed for each site)

Missouri WBID #:		Site Location Description:
Site GPS Coordinates:		
Date & Time:		Facility Name:
Personnel:		Permit Number:
Current Weather Conditions:		Weather Conditions for Past 7 days:
Photo Ids: Upstream:	Downstream:	Other:

Uses Observed*:

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☐ None of the above	☐ Other:
Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)				

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☐ Steep slopes	☐ Other:	

Evidence of Human Use*:

☐ Roads	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Rope swings	☐ Camping Sites	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle
☐ Other:				

Site Locations Map(s): Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

*Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

Page Two – Data Sheet B for WBID #_____:

Stream Morphology:

Upstream View Physical Dimensions:

☐ Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☐ Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☐ Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☐ Flow	Present? ☐ Yes ☐ No		Estimated (ft^3/sec):	

Downstream View Physical Dimensions:

☐ Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☐ Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☐ Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
☐ Flow	Present? ☐ Yes ☐ No		Estimated (ft^3/sec):	

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock

Aquatic Vegetation*: (note amount of vegetation or algal growth at the assessment site)

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☐ None	☐ Other:
Color:	☐ Clear	☐ Green	☐ Gray	☐ Milky	☐ Other:
Bottom Deposit:	☐ Sludge	☐ Solids	☐ Fine sediments	☐ None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	☐ None	☐ Other:

Comments: Please attach additional comments (including information from interviews) to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed:_____Date:_____

Organization:_____ Position: _____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C – Bacterial Data

Name of Submitter:	Date:
Use Evaluated:	
UAA Criterion Evaluated:	
Water Body Evaluated:	WBID:
If segment of WBID, provide description of start and end points of segments:	

Bacterial Counts (colonies/100ml)

		Month 1			
		1	2	3	4
Upstream Sample	A				
Downstream Sample 1	B				
Downstream Sample 2	C				
Downstream Sample 3	D				

		Month 2			
		5	6	7	8
Upstream Sample	A				
Downstream Sample 1	B				
Downstream Sample 2	C				
Downstream Sample 3	D				

		Month 3			
		9	10	11	12
Upstream Sample	A				
Downstream Sample 1	B				
Downstream Sample 2	C				
Downstream Sample 3	D				

Page Two – Data Sheet C – Bacterial Data for WBID #_____:

Stream Characteristics

Sample No.	Date of Sample	Flow Measurement (ft^3/sec)	Depth Measurement (ft.)
A1			
A2			
A3			
A4			
A5			
A6			
A7			
A8			
A9			
A10			
A11			
A12			
B1			
B2			
B3			
B4			
B5			
B6			
B7			
B8			
B9			
B10			
B11			
B12			

Page Three – Data Sheet C – Bacterial Data for WBID #_____:

Stream Characteristics

Sample No.	Date of Sample	Flow Measurement (ft^3/sec)	Depth Measurement (ft.)
C1			
C2			
C3			
C4			
C5			
C6			
C7			
C8			
C9			
C10			
C11			
C12			
D1			
D2			
D3			
D4			
D5			
D6			
D7			
D8			
D9			
D10			
D11			
D12			

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed:_____Date:_____

Organization:_____ Position: _____

Submittal & Review Procedures

Any interested party may conduct a Use Attainability Analysis for the possible removal, downgrading, or subcategorization of a designated use and submit the report to the department. Two copies of the completed UAA report and all supporting documentation should be sent to:

UAA Review Committee
Water Quality Monitoring & Assessment Section
Water Protection Program
Missouri Department of Natural Resources
PO Box 176
Jefferson City, MO 65102-0176

The UAA report shall contain, at a minimum, a statement of the issue, presentation and an evaluation of all evidence (including data), and a summary/conclusion. **A separate UAA report must be submitted for each designated use modification requested.** Supporting documentation for the UAA report may consist of any or all of the following items: topographic maps, aerial photographs, photo-documentation of any existing uses (or evidence of existing uses), transcripts of landowner/local resident interviews and photocopies of all field notes & summaries.

An internal UAA review committee (see description below) will meet periodically as needed to review completed UAAs for accuracy, completeness, and adequacy. The Missouri Department of Natural Resources (MDNR) or other partnering agencies may perform QA/QC procedures and follow-up surveys on any submitted UAA to ensure the completeness, adequacy and accuracy of submitted material. Any incomplete UAA will be returned to the submitter for revisions. If the information gathered supports a confident decision, it will be forwarded to the Missouri Clean Water Commission (the Commission) for approval. Any designated use modifications will be incorporated into Missouri's Water Quality Standards (10 CSR 20-7.031) through the rulemaking process. All designated use modifications approved by the Commission will be open to comments from USEPA Region 7 during the water quality standards rulemaking process to seek federal agreement with the recommendations. (See Figure 1- Site Evaluation Flowchart, and Figure 2 - Flowchart of the Missouri Use Attainability Analysis (UAA) Process).

Public Participation Opportunities

All work products associated with UAA activities are open to the public. The department maintains records of each UAA conducted and will make this information available upon request. Completed UAAs will be posted on the department's web page. The removal of designated uses must be promulgated into rule. Public review and comment on the UAA findings and the proposed removal of designated uses will be sought during the rulemaking.

Internal Review Committee

The Internal Review Committee will consist of at least three (3) employees within the Water Quality Monitoring and Assessment Section of the Water Protection Program. The purpose of the committee is to review UAAs for completeness and adequacy before a recommendation is made to the Director of the Water Protection Program. The findings of the committee will be recorded in the format presented in Table A. This table will be posted on the department's web page following acceptance of the committee's work by the WPP Director.

Table A – Results of Internal Review Committee

Date of Committee Report: ____/____/_____

Committee Members:

_____

_____

Water Body Under Evaluation:

WBID Number: ___ ___ ___ ___

Name of Water Body: _____

Length of Segment: _____

County (ies): _____

Submitter of UAA: _____ Date Rec'd: _____

Use Targeted for Removal: _____

UAA Completeness Check:

Does UAA adequately establish no existing use?	Yes	No
All Required Information Included?	Yes	No
Correct Forms Used?	Yes	No
Forms Signed and Dated?	Yes	No

If information missing, what? _____

Removal Criteria Evaluated: 1-Natural Pollutant Sources.
2-Natural, Ephemeral, Intermittent or Low-Flow Condition.
3-Non-Remedial, Human Caused Condition.
4-Hydrologic Modifications.
5-Natural Physical Features.
6-Substantial, Widespread Social and Economic Impact.

Summary of Basis for Use Removal:

Committee Agrees/Disagrees with UAA Findings:
If Disagrees, Why?

Figure 1- Site Evaluation Flowchart

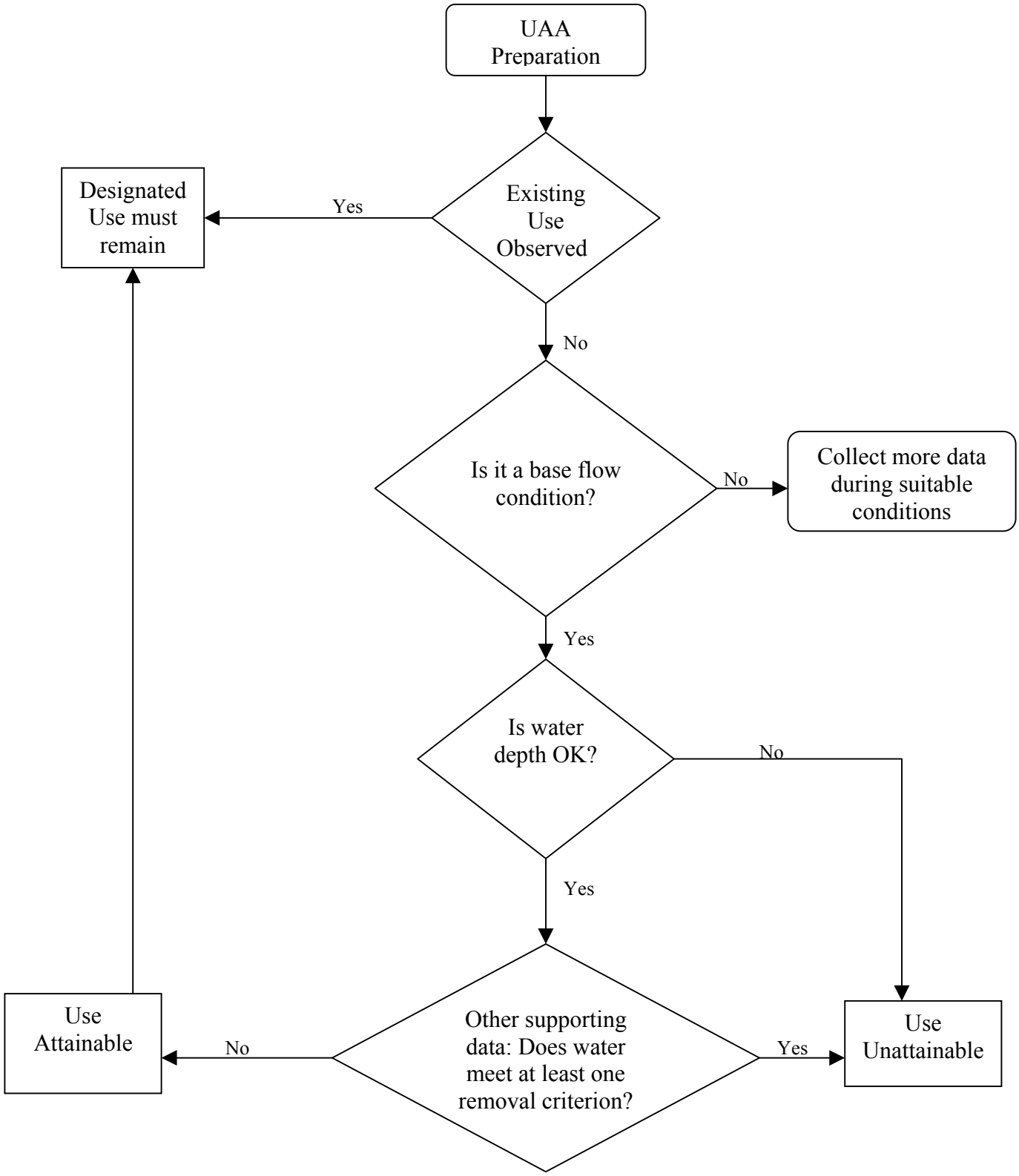

Figure 2- Missouri Use Attainability Analysis (UAA) Process